

IN THE CLAIMS

The following a copy of the claims in the application with claims 1-5, 8-12, 14 and 17-20 shown as currently amended, and claims 6, 7, 16 and 21 shown as canceled.

LISTING OF CLAIMS

1. (currently amended) An individual cell for a fuel cell comprising:

a first electrode layer having a first porosity;

a second electrode layer having a second porosity;

~~and second electrode layers;~~ gas inlets dedicated to each of said electrode layers respectively with each gas inlet defining passages within the cell in direct contact with the electrode layer to which each gas inlet is dedicated for enabling gas transfer through the electrode layers ~~with said electrode layers having first and a second porosities;~~

a solid electrolyte layer located between said first and second electrode layers;

wherein the first electrode layer comprises a first non-porous zone located in proximity to the gas inlet dedicated to the second electrode layer for enabling transfer of the first gas through the first electrode layer; and with each of the two electrode layers comprising an anode and a cathode and with at least one of the two electrode layers having at least a first compact zone with a third porosity which is lower than the porosity

wherein said first non-porous zone comprises a protuberance of the electrolyte layer which extends into of the first electrode layer forming in which the first an internal seal which prevents the mixing of the first gas with the second gas in the first electrode layer compact zone is located, wherein the compact zone is a protuberance of the electrolyte layer which extends from the electrolyte layer into said electrode layer thereby forming an area of low porosity disposed adjacent the gas inlet dedicated to the other electrode layer and wherein said protuberance forms an internal seal creating a self-tight fuel cell architecture.

2. (currently amended) An individual cell for a fuel cell according to claim 1 wherein the first electrode layer has a first thickness and said first non-porous zone compact zone has a thickness identical to the first thickness.

3. (currently amended) An individual cell for a fuel cell according to claim 1 wherein the second electrode layer comprises at least a second non-porous compact zone with a fourth porosity, the fourth porosity being lower than the second

perosity in proximity to the gas inlet dedicated to the first electrolyte layer for enabling gas transfer through the second electrode layer and further comprising a protuberance of the electrolyte layer which extends into the second electrode layer to form an internal seal creating a self-tight fuel cell architecture.

4. (currently amended) An individual cell for a fuel cell according to claim 3 wherein the second electrode layer has a second thickness, and the a second non-porous compact zone has a thickness identical to the second thickness.

5. (currently amended) An individual cell for a fuel cell according to claim 1 further comprising one bipolar plate adjacent to the first or second electrode layer ~~4 wherein the first electrode layer has a first thickness, and a first compact zone has a thickness identical to the first thickness.~~

6. (cancelled).

7. (cancelled).

8. (currently amended) An individual cell for a fuel cell according to claim 1 ~~7~~ comprising two bipolar plates adjacent to each electrode layer.

9. (currently amended) An individual cell for a fuel cell according to claim 8 wherein one the bipolar plate has a coefficient of thermal expansion higher than the coefficient of thermal expansion of the adjacent electrode layer and the electrolyte layer.

10. (currently amended) An individual cell for a fuel cell according to claim 9 wherein the one bipolar plate is connected to the adjacent electrode layer by nesting.

11. (currently amended) An individual cell for a fuel cell according to claim 10 wherein the one bipolar plate comprises at least a protuberance and the adjacent layer comprises a cavity, said protuberance of the bipolar plate and the cavity fitting one into the other.

12. (currently amended) An individual cell for a fuel cell according to claim 11 wherein the cavity is located in a non-porous compact zone of the adjacent electrode layer.

13. (previously presented) An individual cell for a fuel cell according to claim 12 wherein the cavity is located in a protuberance of the electrolyte layer.

14. (currently amended) An individual cell for a fuel cell according to claim 11 wherein the cavity of the adjacent layer is larger in width and/or in depth than the width and/or height of the protuberance of the bipolar plate.

15. (currently amended) An individual cell for a fuel cell according to claim 11 comprising a plurality of cavities.

16. (cancelled).

17. (currently amended) A fuel cell comprising a stack of cells according to claim 1 ~~16~~, each cell being separated from its neighbor by a bipolar plate.

18. (currently amended) A fuel cell ~~comprising a stack of cells~~ according to claim 17 with a circular plane geometry.

19. (currently amended) An individual cell for a fuel cell having ~~comprising a stack of cells with each cell comprising:~~

an anode layer,

a cathode layer,

a solid electrolyte layer located between the anode layer and the

cathode layer, and

~~with the fuel cell comprising~~ having separate gas inlets dedicated to each of the anode and cathode said-electrode layers respectively with each gas inlet defining passages within the cell in direct contact with the electrode layer to which each gas inlet is dedicated for enabling gas transfer through the electrode layers,

a bipolar plate adjacent to each of the anode and cathode layers respectively having at least one protuberance extending therefrom, and

with each ~~of the~~ anode and cathode layer in each cell comprising a non-porous dense zone having a thickness equal to the thickness of the ~~corresponding anode and cathode layer~~ in a corresponding cell, ~~with the porosity of the dense zone being larger than the porosity of the corresponding anode and cathode layer, the dense~~ the non-porous zone comprising a cavity in which the corresponding protuberance of the adjacent bipolar plate can fit.

20. (currently amended) An individual cell according to claim 19 wherein the comprising gas inlets for one of the anode and cathode located in non-porous dense zones of the other anode and cathode.

21. (cancelled).